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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/722,556	11/28/2003	Tomoaki Abe	ST3001-0035	4976

39083 7590 12/16/2005  
CERMAK & KENEALY, LLP  
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Alexandria, VA 22314

EXAMINER
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HU, SHOUXIANG

ART UNIT	PAPER NUMBER
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2811

DATE MAILED: 12/16/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/722,556

Applicant(s)

ABE ET AL.

Examiner

Shouxiang Hu

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-20 is/are pending in the application.
- 4a) Of the above claim(s) 4,5,7-10,13-17 and 20 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3,6,11,12,18 and 19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input type="checkbox"/> Interview Summary (PTO-413)                     |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. _____  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## **DETAILED ACTION**

### ***Election/Restrictions***

1. In view of the previous office actions, claims 4-5, 7-10, 13-17 and 20 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention.

Accordingly, Claims 1-20 are pending in this application; and claims 1-3, 6, 11-12, 18 and 19 remain active in this office action.

### ***Claim Objections***

2. Claims 1-3, 6, 11-12, 18 and 19 are objected to because of the following informalities and/or defects:

Claims 1 and 18 each recite the subject matter that the recited one metallic film is composed of a substantially single material; but the original specification lacks an adequate description regarding in what sense the term of "a substantially single material" is defined, as the term of "substantially" can be interpreted as meaning: being largely but not wholly that which is specified. It is not clear what type of other material(s) is/are also composed in what portion in the recited metal film(s).

Claim 2 recites the terms of "lower electrode" and "upper electrode", but fails to clarify their relationships with the electrodes defined in claim 1.

In claim 19, the term of "the at least one upper electrode" lacks a sufficient antecedent basis in the claim.

Appropriate correction is required.

***Claim Rejections - 35 USC § 112***

3. The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claims 1-3, 6, 11-12, 18 and 19, insofar as being supported by the elected species, are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. Claims 1 and 18 each recite the subject matters that the recited one metallic film is directed connected to the recited one electrode. However, full support cannot be found in the original disclosure for these subject matters. As shown in Figs. 1-3 of the elected species, instead of being "directed connected to", there is a conductive adhesive layer 11 between the lower electrode 13 of the LED chip 12 and the metallic film 5; and there is a wire between the upper electrode and the metallic film 6.

***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1-3, 6, 12, 18 and 19, insofar as being compliance with 35 U.S.C. 112, as being fully supported by the elected species, and as being best understood in view of the claim objections above, are rejected under 35 U.S.C. 102(e) as being anticipated by Fjelstad (US 6,583,444).

Fjelstad discloses a surface-mounted light-emitting diode (Figs. 7J, 8A, and/or 8B), comprising: a light-emitting diode chip (332) sealed in an optically transmissive resin (348, 354 and/or 360); a plurality of metallic films (in Fig. 7J: one metallic film is the lamination of 328 and thin coating 374, and the other one is the lamination of 326 and thin coating 374; in Figs. 8A and 8B: one metallic film is 328 (the left pad; see col. 11, lines 15-35), and the other one is 326 (in Fig. 8A) or the lamination of 326 and 374 in Fig. 8B)) formed on different locations on a surface of the optically transmissive resin; and a plurality of electrodes formed on the surfaces of the light-emitting diode chip and connected to respective ones of the metallic films, wherein the electrodes include the upper one and the lower one. And, it is noted that the metallic layer 328 (or 326) alone or its lamination with the overlying and underlying films 374 (see Figs. 7G-7J) each can be naturally regarded as a metallic film as it is metallic and is substantially thin; and that the bottom surface of it is exposed at the bottom surface of the light-emitting diode. It is further noted that the metallic film 328 in Figs. 8A and 8B is naturally shown there to be

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a single-material film; and/or that the metallic film of the lamination of 328 (or 326) and thin coating 374 as shown in Fig. 7 can also be regarded as a film that is comprised of a substantially single material since the main film 328 (or 326) shown therein is substantially thicker than the coating film 374. Besides, the recited limitation of "composed of a substantially single material" does not necessarily exclude any other material(s) in the recited metallic film(s), since the recited term of "composed of" can be interpreted to be in an open-ended manner. Furthermore, the connections between the metallic films and the electrodes of the electrodes of the LED chip in Fjelstad can be regarded as being substantially directly electrically connected to each other respectively, as the respective interconnections therebetween are substantially conductive.

In addition, it is noted that any potentially implicated process limitations regarding how the recited metallic film is made would not carry patentable weight in the claims drawing to a structure, because distinct structure is not necessarily produced. In re Thorpe, 227 USPQ 964, 966 (Fed. Cir. 1985).

Regarding claim 3, the metallic film (the lamination of 374 and 326) under the lower electrode (378) in Fjelstad is conical shaped and has a reflective inner surface.

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claim 11, insofar as being compliance with 35 U.S.C. 112, as being fully supported by the elected species, and as being best understood in view of the claim objections above, is rejected under 35 U.S.C. 103(a) as being unpatentable over Fjelstad in view of Kimura (Kimura et al., US 5,739,552).

The disclosure of Fjelstad is discussed as applied to claims 1-3, 6, 12, 18 and 19 above.

Although Fjelstad does not expressly disclose that an additional upper electrode can be formed on the diode chip and connected to an additional metallic film, one of ordinary skill in the art would readily recognize that additional upper electrode(s) can be desirably formed on the diode chip in order to be able to generate desired different colors or combined color(s), as evidenced in Kimura (see the upper electrodes 51 and/or 52, which is/are in addition to the upper electrode 53); and that additional metallic films can be readily formed at the bottom of the device, as further evidenced in Fjelstad (see the multiple metal films 736 at the bottom of 722 in Fig. 12), and such additional metallic films would readily function as the contact pad(s) for the additional upper electrode(s) of the diode chip.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate the additional upper electrode(s) of Kimura into the device of Fjelstad with additional metallic film(s) being formed to function as the corresponding contact pad(s), so that a light-emitting device with desired color(s) would be obtained.

***Response to Arguments***

9. Applicant's arguments filed on 08/04/2005 have been fully considered but they are not persuasive.

Applicant's main arguments include: Fjelstad does not disclose the claimed invention.

In response, it is noted that the newly added subject matters about "directly connected to" is not found to be fully supported by the original disclosure, as explained the above claim rejections under 35 U.S.C. 112.

Response to applicant's other arguments have been fully incorporated into the claim rejections and claim objections set forth above in this office action.

***Conclusion***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Shouxiang Hu whose telephone number is 571-272-1654. The examiner can normally be reached on Monday through Thursday, 7:30 AM to 6:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Eddie C. Lee can be reached on 571-272-1732. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.



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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

SH  
November 3, 2005



**SHOUXIANG HU**  
**PRIMARY EXAMINER**